



CH2M HILL

2485 Natomas Park Drive

Suite 600

Sacramento, CA 95833-2937

Tel 916.920.0300

Fax 916.920.8463

January 3, 2003

Ms. Kristy Chew
Siting Project Manager
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814

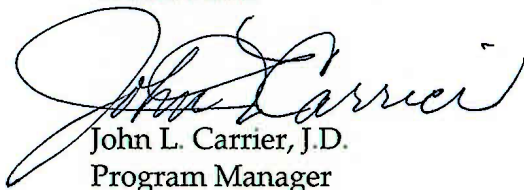
RE: Data Responses, Set 3M
Cosumnes Power Plant (01-AFC-19)

On behalf of the Sacramento Municipal Utility District, please find attached 12 copies and one original of the Data Responses, Set 3M, in response to Staff's Data Requests dated April 5, 2002.

Please call me if you have any questions.

Sincerely,

CH2M HILL



John L. Carrier, J.D.
Program Manager

c: Colin Taylor/SMUD
Kevin Hudson/SMUD
Steve Cohn/SMUD

COSUMNES POWER PLANT (01-AFC-19)

DATA RESPONSE, SET 3M (Responses to Data Requests: 186 and 187, Supplemental)

Submitted by
**SACRAMENTO MUNICIPAL
UTILITY DISTRICT (SMUD)**

January 3, 2003



2485 Natomas Park Drive, Suite 600
Sacramento, California 95833-2937

COSUMNES POWER PLANT (01-AFC-19)
DATA RESPONSES, SET 3M

Technical Area: Biological Resources

Authors: Melinda Dorin and Rick York

CPP Author: EJ Koford

BACKGROUND

In the AFC page 8.2-15, in the Impacts to Trees section it states that impacts to trees are unlikely, but if it becomes necessary to remove tree(s) then the loss will be mitigated in accordance with the appropriate requirements specified by the County Tree Coordinator. However, Sacramento County has a Tree Preservation Ordinance (SCC 480 §1, 1981) to protect heritage trees.

DATA REQUEST

186. Provide a figure that shows where heritage trees are located along the proposed pipeline that may be impacted by construction activities (e.g., trenching, boring, heavy equipment maneuvering with a tree's dripline).

Response: On May 6, 2002, SMUD provided information as to the number and location of heritage trees in response to Data Requests 186 and 187. To supplement this information, please find a copy of a letter sent to Mr. Jim Schubert, County Tree Coordinator for Sacramento County. It is provided as Attachment BR-186S.

187. If any heritage trees are identified along the proposed pipeline, discuss measures that will be taken to mitigate any impacts.

Response: See response to Data Request 186, above.

CH2M HILL

2485 Natomas Park Drive

Suite 600

Sacramento, CA 95833-2937

Tel 916.920.0300

Fax 916.920.8463

ATTACHMENT BR-186S

CH2MHILL

December 31, 2002

Mr. Jim Schubert
County Tree Coordinator
County of Sacramento Public Works Agency
906 G Street, Suite 510
Sacramento, CA 95814-1812

Subject: Authorization to Remove Oak Trees, Cosumnes Power Project

Dear Mr. Schubert:

Thanks for speaking with me with regard to protecting native oaks and heritage trees along the pipeline for the Cosumnes Power Project. Enclosed with this letter is a description, measurements and maps showing the locations of native oak trees that would potentially be affected by construction of the 24-inch gas pipeline.

The lead agency for this project is the California Energy Commission, which has prepared a Preliminary Staff Assessment and will soon prepare the Final Staff Assessment (FSA). The FSA is a functional equivalent to an EIR for purposes of CEQA. The FSA will contain conditions to be implemented by the applicant (SMUD) to avoid, minimize and compensate for adverse impacts to environmental resources. In the case of oak trees, there is one heritage-size valley oak (VO-9) between Laguna and Elk Grove boulevards, between the UPRR and residential soundwall. Construction of the pipeline would pass under the dripline of this tree. Several smaller trees are located in the alignment north of this site where trees will probably need to be removed.

The CEC requires notification that this information has been transmitted to Sacramento County, and will probably contact you regarding recommendations for mitigation. SMUD looks forward to working with you to preserve and enhance the necessary resources. If you require additional information, please do not hesitate to call me at (916)286-0305 or SMUD project manager Kevin Hudson at (916)732-7101.

Sincerely,
CH2M HILL



E. J. Koford
Sr. Biologist

c: K. Hudson (SMUD)

Tree Removal/Encroachment Permit Submittal for SMUD's 24 Inch Diameter Natural Gas Pipeline

PREPARED FOR: County of Sacramento Public Works Agency
County Tree Coordinator
906 G Street, Suite 510
Sacramento, CA 95814-1812

PREPARED BY: Victor Leighton III/CH2MHILL

COPIES: EJ Koford/CH2MHILL

DATE: December 9, 2002

Project Description

An assessment of native oaks was conducted for the Sacramento Municipal Utility District's 24-inch-diameter natural gas pipeline for the proposed Cosumnes Power Plant (CPP) in southern Sacramento County, California. The project area includes the 26-mile alignment from the Carson Cogen Plant to the proposed CPP near Rancho Seco (Figure 1). This report documents native oaks that are within the construction corridor of the proposed pipeline that may be removed.

The objective of this native oak investigation is to obtain a County of Sacramento tree permit if necessary to authorize tree removal. SMUD understands that the City of Elk Grove has adopted Sacramento County's Tree Ordinances requirements. The assessment identified locations, species and sizes of native oaks in the proposed construction corridor.

In accordance with the County of Sacramento Public Works Agency Tree Preservation Plan Submittal Requirements and Sacramento County Code. 19.12.080 Application Procedures. The following requirements have been addressed.

1. The county tree coordinator has been contacted to set up an appointment to meet a staff member at the construction site.
2. Construction plans are prepared showing locations of native oaks, including diameter at breast height, species of trees, and canopy cover to edge of drip line in relation to the proposed pipeline and construction zone limits.
3. Any trees removed will be mitigated according to the County Tree Coordinator requirements. Replacement for the total number of inches of native oaks will be on an inch-for-inch basis and be in the form of replanting on site or payment at current market value for the same species of oak removed. For replanting 1-15gallon tree equals 1 inch of tree removed; 1-24' box tree equals 2 inches; and 1 36' box tree equals 3 inches of oak tree removed.

Application Procedure. Any person desiring to cut down, destroy or remove one or more trees shall make application to the approving body not less than ten days prior to the time desired to physically remove the tree. Said application shall contain:

1. A brief statement of the reasons for removal:
2. Consent of the owner or record of the land on which proposed activity is to occur. SMUD is negotiating with all owners along the alignment for permission to remove trees, where necessary for construction.
3. A tree survey with the accurate location, number, species, size (diameter measured 4 ½ feet above ground, approximately heights, and approximate canopy diameter) and approximate age (if known) of the tree or trees to be removed."

Construction Practices

Most of the natural gas pipeline will be constructed using open cut trench methods except where boring or directional drilling is required to pass beneath highways, railroads, natural water courses, or other locations where required to avoid surface disturbances. The pipeline will be buried to provide a minimum cover of 5 feet. The temporary right-of-way (ROW) for pipeline construction will be generally 65 feet wide, containing a 25 foot wide spoils side to store excavated earthen material and a 40 foot wide working side for the trench and pipeline construction equipment. If necessary, additional materials storage locations may be located along the pipeline ROWs. The construction corridor will be narrowed at locations where sensitive resources exist, for example to reduce impact to the one heritage-size tree between Laguna and Elk Grove Boulevards. However, even reduced construction corridor width will not avoid all trees.

Current Land Use

The 24-inch gas pipeline primarily follows road and railroad rights of way (ROW). It will cross under several valley streams (Cosumnes River, Badger Creek, Laguna Creek) and irrigation ditches, and then lies in a road ROW along Twin Cities Road and Clay East Road, which is surrounded primarily by hay, alfalfa, and vineyards.

Most of the pipeline will be buried in existing public right-of-way (road easement), railroad right-of-way, and other utility easements. A portion of the line extending from Core Road to Arno Road will cross lands used for agricultural, public utility, and natural preservation. The area where the pipeline will be placed outside of existing right-of-way is designated as Agricultural Cropland and Natural Preserve/Resource Conservation Area (Cosumnes River Preserve). Most of these areas are used for row crops, vineyards, and pastures.

Methods

A survey was conducted by a CH2MHILL Botanist, following Sacramento County's Tree Preservation and Protection Ordinance guidelines (Ordinance). As outlined in the Ordinance, the native oak trees dbh was measured, identified and location recorded by ground positioning system (GPS) as well as the trees approximate height and canopy

diameter (Figure 2, Figure 3, and Table 1). Native oak trees were measured at diameter at breast height (dbh), four and one half feet from ground standing on the high side of tree. In cases where a native oak had multiple trunks at the dbh, all trunks were recorded according to the County's Ordinance Section 1, Chapter 19.12. Section 19.12.040.

"Tree: As used in this chapter, a "tree" shall mean any living native oak tree having at least one trunk of six or more inches in diameter measured four and one-half (4 ½) feet above ground, or a multi-trunk native oak tree having an aggregate diameter of ten inches or more, measured four and one-half (4 ½) feet above the ground (dbh)."

"Native oak Tree: Shall include any of the following: valley oak (*Quercus lobata*), interior live oak (*Quercus wislizenii*), blue oak (*Quercus douglasii*), or oracle oak (*Quercus morehus*)."

Results

The only native oaks that will be affected by trenching techniques along the 26-miles of proposed gas pipeline construction corridor are located south of Laguna Boulevard and north of Elk Grove Boulevard along the Union Pacific Railroad tracks (Figure 3). These trees are located between the railroad tracks and a residential sound wall. The associated vegetation includes annual grasses and ruderal forbs.

VO-1

Is a single tree with multiple trunks at breast height (4 ½ feet) one trunk has an 11 inch dbh, the second trunk has a 5 inch dbh. The tree is healthy with a canopy diameter of approximately 8 feet and a height of approximately 15 feet. This tree will be removed.

VO-2

Is a single tree with a 10.6 inch dbh. The tree is healthy with a canopy diameter of approximately 6 feet and a height of approximately 12 feet. This tree will be removed.

VO-3

Is a single tree with a 6.2 inch dbh. The tree is healthy with a canopy of approximately 6 feet and a height of approximately 10 feet. This tree will be removed.

VO-4

Is a single tree with a 5.3 inch dbh. The tree is healthy with a canopy of approximately 6 feet and a height of approximately 10 feet. This tree will be removed.

VO-5

Is a single tree with multiple trunks at breast height (4 ½ feet) one trunk has an 7.2 inch dbh, the second trunk has a 7.8 inch dbh. The tree is healthy with a canopy of approximately 8 feet and a height of approximately 12 feet. Tree to be removed.

VO-6

Is a single tree with multiple trunks at breast height (4 ½ feet) one trunk has an 6.3 inch dbh, the second trunk has a 4.4 inch dbh. The tree is healthy with a canopy of approximately 8 feet and a height of approximately 12 feet. This tree is on the edge of construction limits and should not be affected. Tree will be fenced off.

VO-7

Is a single tree with multiple trunks at breast height (4 ½ feet) one trunk has an 4.6 inch dbh, the second trunk has a 5.8 inch dbh. The tree is healthy with a canopy of approximately 6 feet and a height of approximately 10 feet. This tree is on the edge of construction limits and should not be affected. Tree will be fenced off.

VO-8

Is a single tree with multiple trunks at breast height (4 ½ feet) one trunk has an 3 inch dbh, the second trunk also has a 3 inch dbh. The tree is healthy with a canopy of approximately 5 feet and a height of approximately 8 feet. This tree is below the required aggregate dbh total for preservation/removal requirements. This tree is to be removed.

VO-9

Is a heritage size tree with a 47.4 inch DBH. The tree is located along a brick sound wall behind a residential housing tract. This tree is not proposed for removal, however the proposed pipeline will go beneath the trees canopy and effect the primary root zone of this heritage oak.

VO-10

VO-10 is a grouping of three multi-trunk trees. The first tree has a 3.2 inch dbh, the second tree has a combined dbh of 14 inches. The third tree in this cluster has a combined dbh of 9.5 inches. The trees are healthy with a canopy of approximately 5 feet and a height of approximately 8 feet. This tree is on the edge of construction limits and should not be affected. Tree will be fenced off.

VO-11

Is a single tree with multiple trunks at breast height (4 ½ feet) one trunk has an 6.7 inch dbh, the second trunk has a 4.3 inch dbh. The tree is healthy with a canopy of approximately 5 feet and a height of approximately 8 feet. This tree is on the edge of construction limits and should not be affected. Tree will be fenced off.

VO-12

Is two trees one with two trunks and a single tree with a 3.8 inch dbh. The trees are healthy with a canopy of approximately 4 feet and a height of approximately 6 feet. These trees are on the edge of construction limits and should not be affected. Trees will be fenced off.

Data for each tree if listed in Table 1.

Avoidance/Minimization Measures

Oak trees that are not being removed will be fenced off with orange construction fencing at the outer edge of dripline. This fencing will protect the root zone from soil compaction/oxygen depletion; this includes any change in ground level under the tree, either by mounding up soil or excavating it. Excavating soil can destroy the roots and expose them to damage by surface activities. Mounding up of soil reduces the oxygen supply to the root zone, which can suffocate a tree.

Figures
Pipeline Alignment and Tree Locations

6

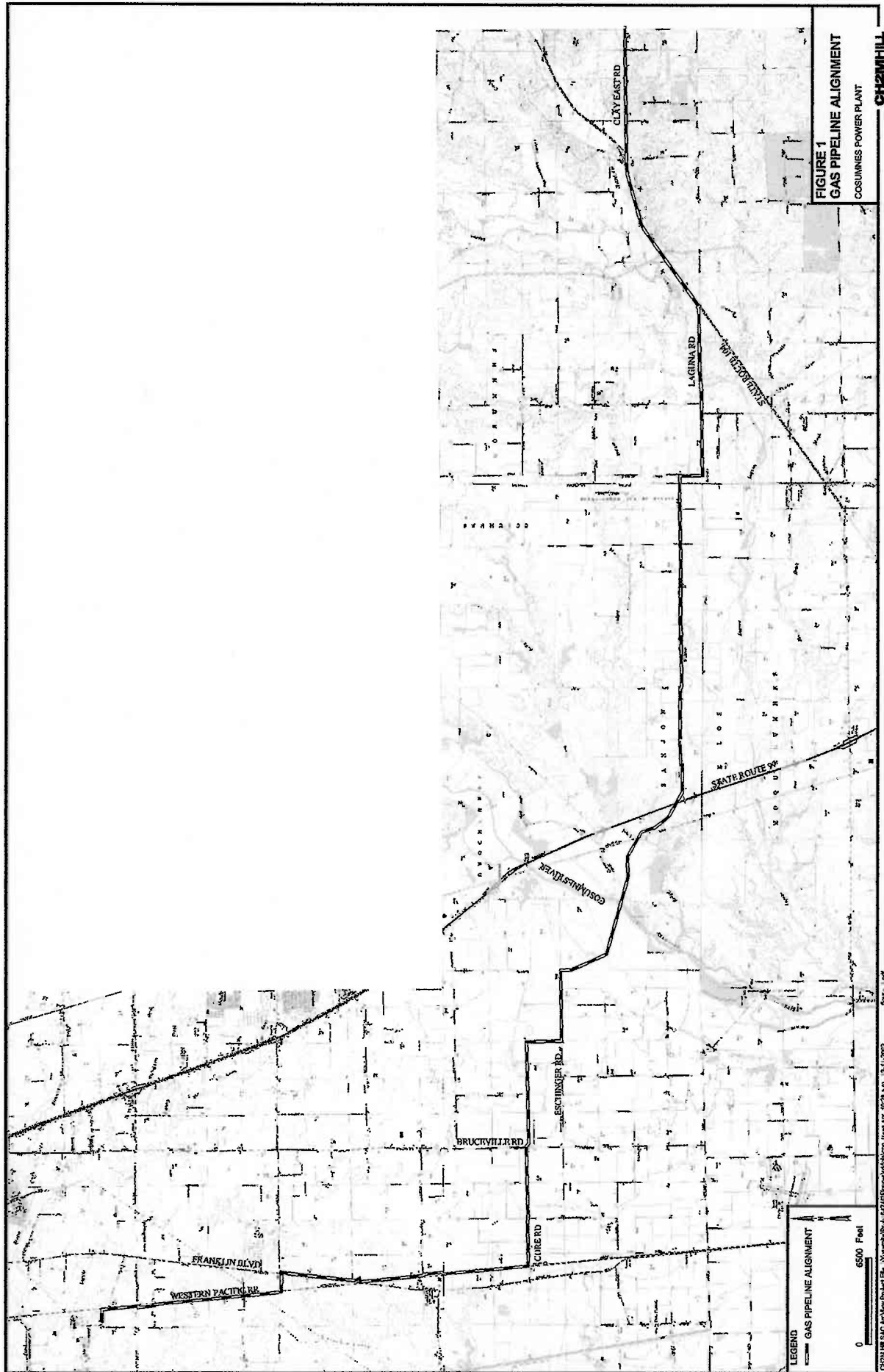
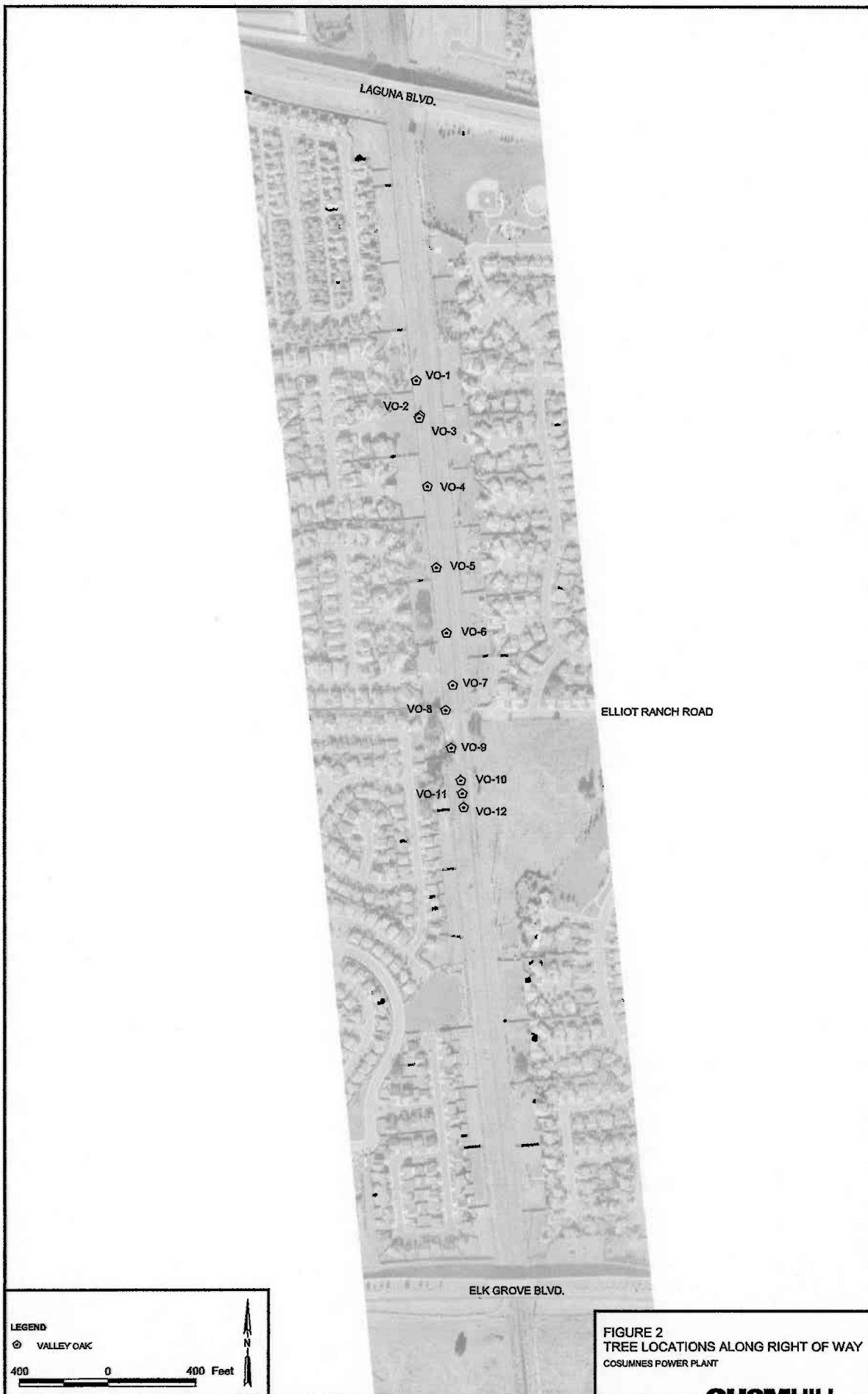
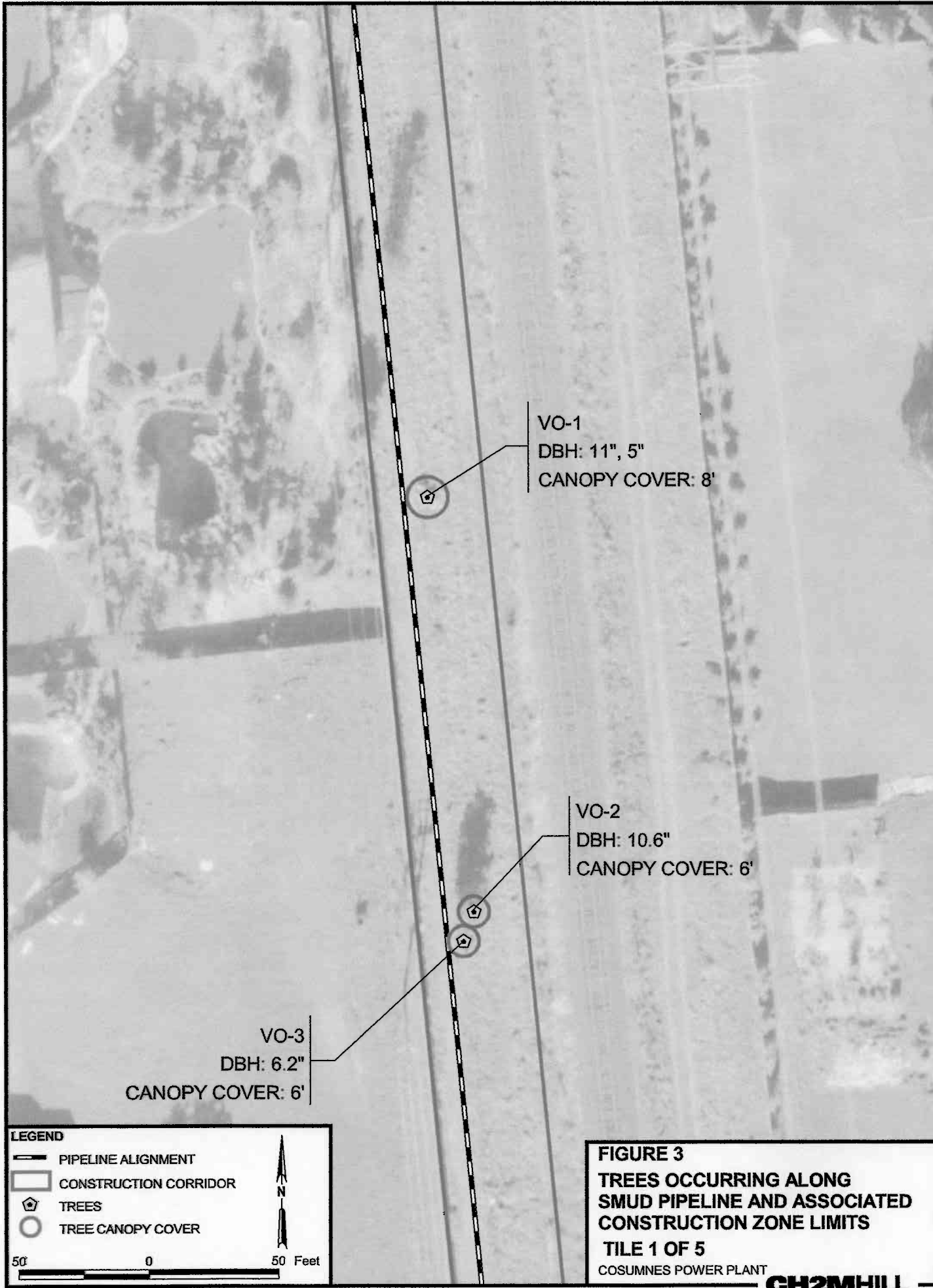


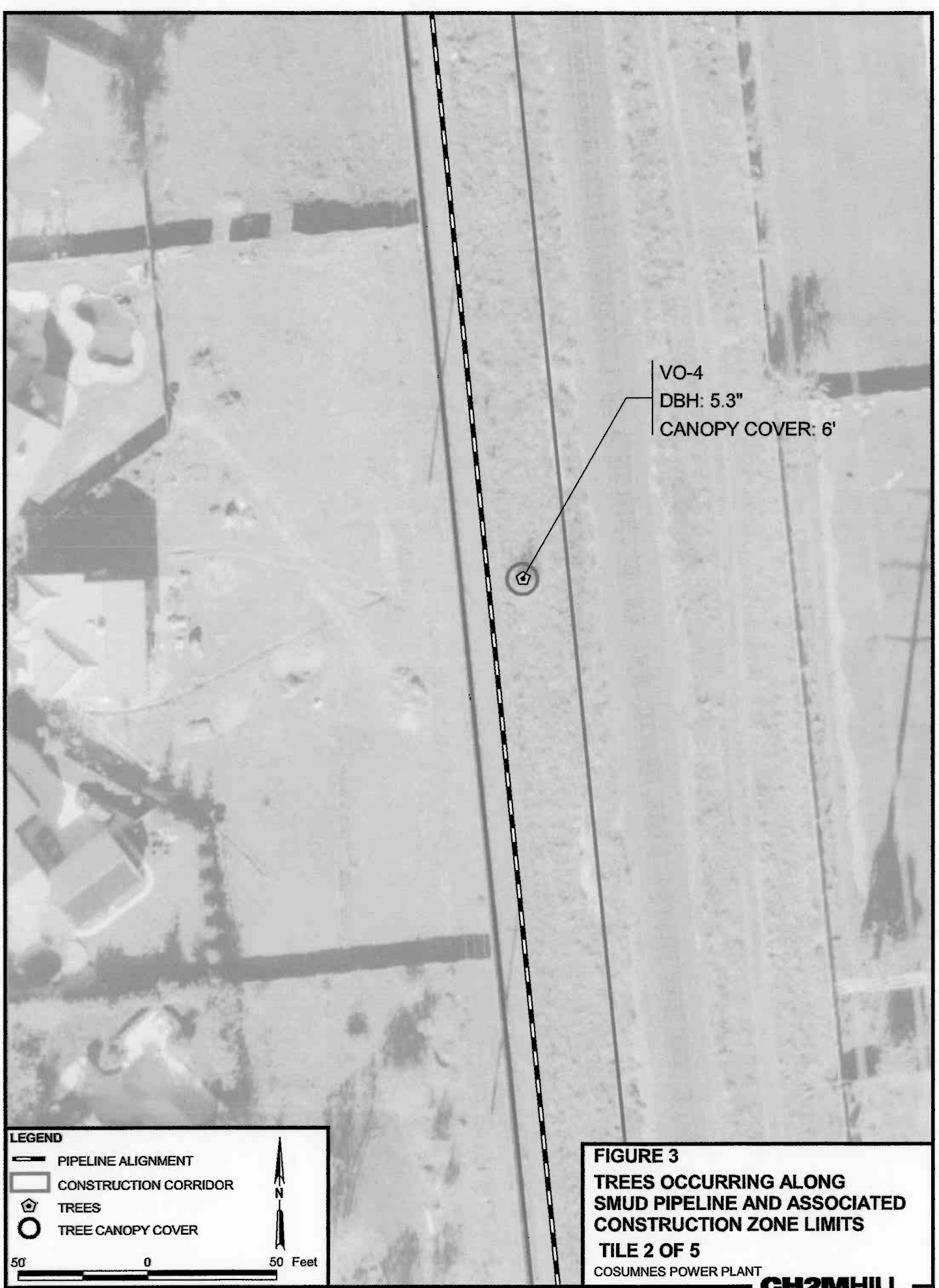
FIGURE 1
GAS PIPELINE ALIGNMENT
 COSUMES POWER PLANT
 CH2M/HILL

LEGEND
 — GAS PIPELINE ALIGNMENT





0 6500 Feet







LEGEND

-  PIPELINE ALIGNMENT
-  CONSTRUCTION CORRIDOR
-  TREES
-  TREE CANOPY COVER

50' 0 50 Feet

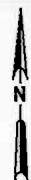


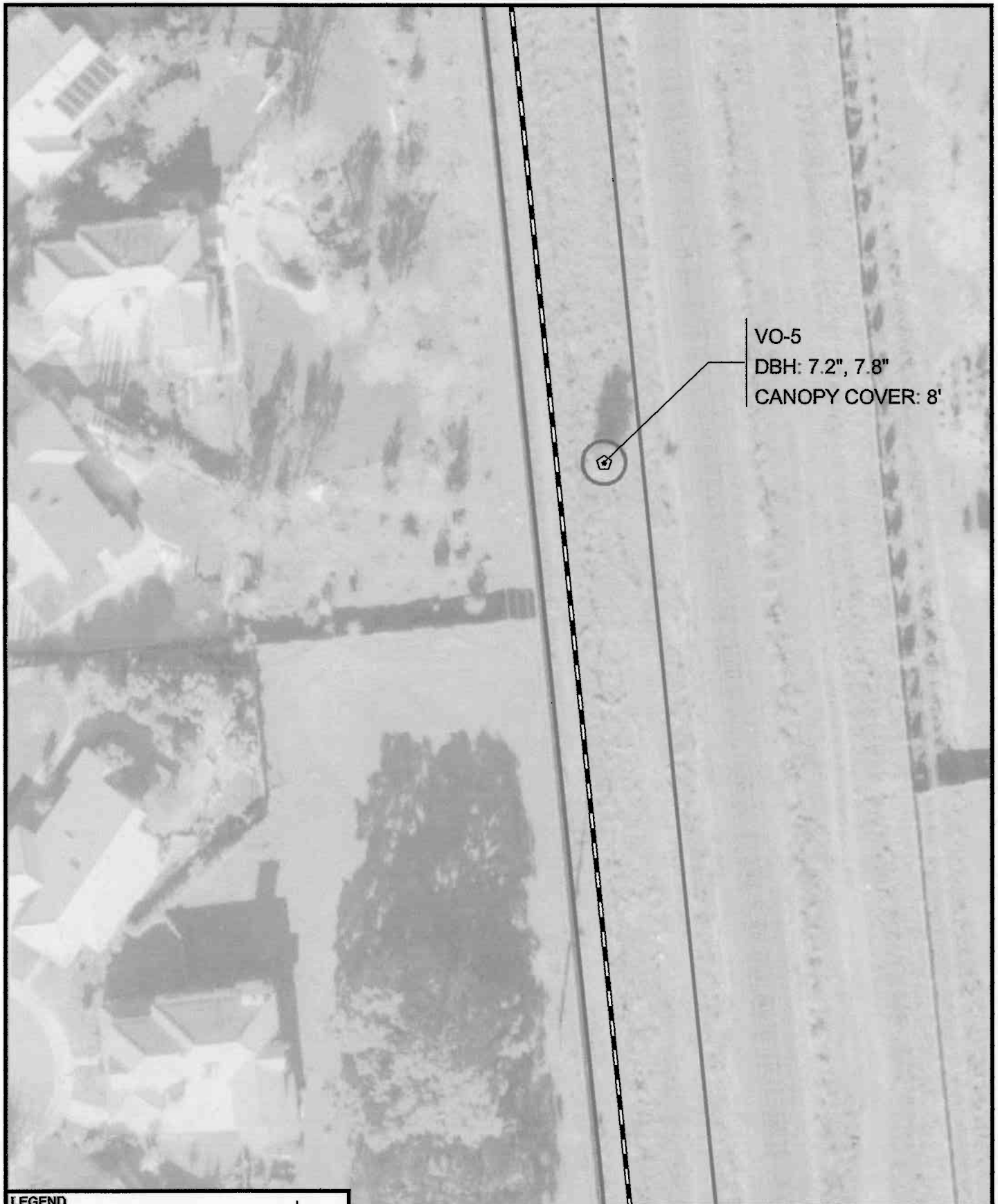
FIGURE 3

**TREES OCCURRING ALONG
SMUD PIPELINE AND ASSOCIATED
CONSTRUCTION ZONE LIMITS**

TILE 2 OF 5





COSUMNES POWER PLANT

CH2MHILL



VO-5
DBH: 7.2", 7.8"
CANOPY COVER: 8'

LEGEND

-  PIPELINE ALIGNMENT
-  CONSTRUCTION CORRIDOR
-  TREES
-  TREE CANOPY COVER

50' 0 50 Feet

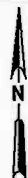


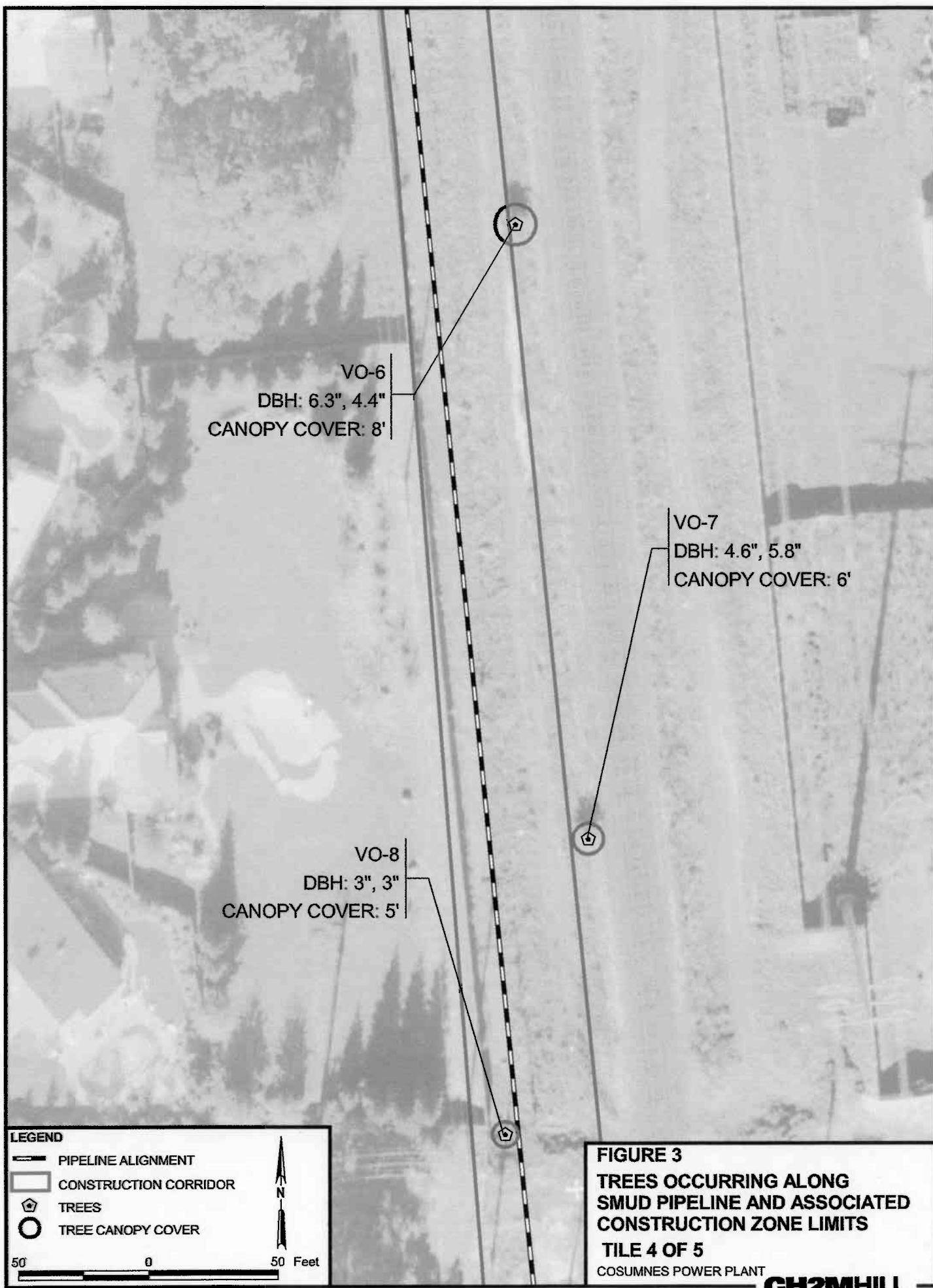
FIGURE 3

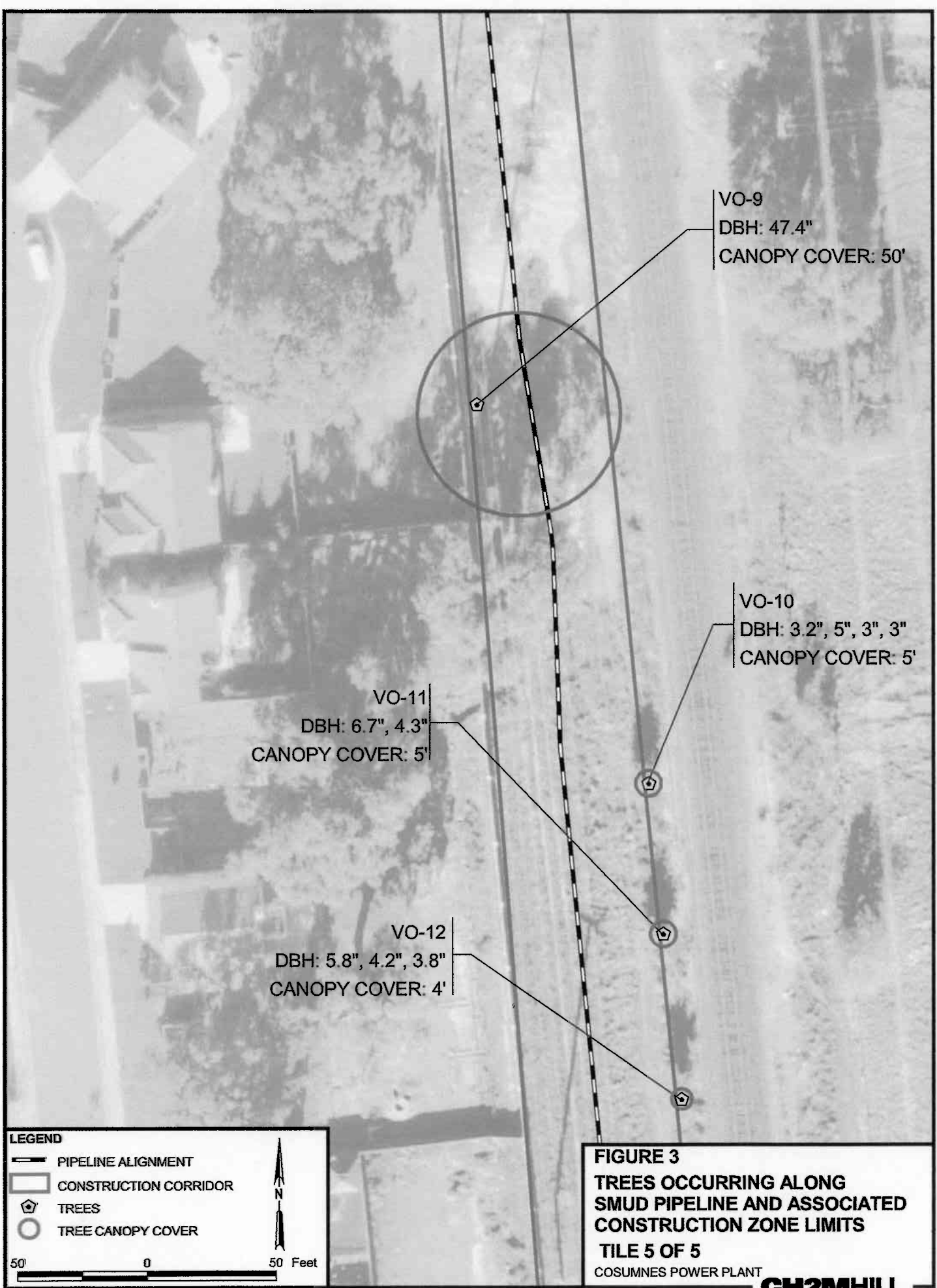
TREES OCCURRING ALONG
SMUD PIPELINE AND ASSOCIATED
CONSTRUCTION ZONE LIMITS

TILE 3 OF 5

COSUMNES POWER PLANT

CH2MHILL





Oak

TREE PERMIT 2_EJK.DOC

TABLE 1. TREES OCCURRING ALONG SMUD NATURAL GAS PIPELINE AND ASSOCIATED CONSTRUCTION ZONE LIMITS A

Tree I.D.	Common Name	Scientific Name	DBH	Estimated Canopy Cover	Notes
VO-1	Valley Oak	Quercus lobata	11", 5"	8'	Single tree with two trunks at DBH. Healthy.
VO-2	Valley Oak	Quercus lobata	10.6"	6'	Healthy.
VO-3	Valley Oak	Quercus lobata	6.2"	6'	Healthy.
VO-4	Valley Oak	Quercus lobata	5.3"	6'	Healthy.
VO-5	Valley Oak	Quercus lobata	7.2", 7.8"	8'	Single tree with two trunks at breast height. Healthy.
VO-6	Valley Oak	Quercus lobata	6.3", 4.4"	8'	Single tree with two trunks at breast height. Healthy.
VO-7	Valley Oak	Quercus lobata	4.6", 5.8"	6'	Single tree with two trunks at breast height. Healthy.
VO-8	Valley Oak	Quercus lobata	3", 3"	5'	Single tree with two trunks at breast height. Healthy.
VO-9	Valley Oak	Quercus lobata	47.4"	50'	Heritage tree. Healthy.
VO-10	Valley Oak	Quercus lobata	3.2"	5'	Three trees in a cluster, multiple trunks at breast height. Healthy.
			5", 3", 3", 3"		
			2", 4", 3.5"		
VO-11	Valley Oak	Quercus lobata	6.7", 4.3"	5'	Single tree with two trunks at breast height. Healthy.
VO-12	Valley Oak	Quercus lobata	5.8", 4.2", 3.8"	4'	Two trees, one with two trunks at breast height. Healthy.